

4.0 ANALYTICAL RESULTS

The following sections convey analytical results from asbestos bulk samples and perimeter and personal air samples.

4.1 ASBESTOS BULK SAMPLING RESULTS

Table 1 lists laboratory analytical results from bulk samples found to contain asbestos at greater than 1 percent.

TABLE 1: BULK ASBESTOS ANALYTICAL RESULTS

MATERIAL DESCRIPTION	ASBESTOS PERCENTAGE AND TYPE
Transite Fire Door	20 to 25 percent chrysotile
Transite Siding	15 to 20 percent chrysotile
Floor Tile and Associated Mastic	3 to 8 percent chrysotile

Laboratory analytical results from all asbestos bulk samples are listed in Table D-1 Appendix D and the laboratory analytical report from EMSL (received on June 7, 2019) is in Attachment 2.

A visual inspection of the bulk materials identified as ACM indicated that those materials had been rendered to a friable state during building demolition and as a result of weathering during exposure to the elements. A friable asbestos material contains more than 1 percent asbestos that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure, such as spray-applied fireproofing on structural steel members, spray-applied acoustical ceiling materials, or damaged thermal system insulation; these are considered Regulated Asbestos Containing Materials (RACM). Removal and disposal of RACM by an Asbestos Hazard Emergency Response Act (AHERA) certified asbestos inspector is necessary. Because the identified ACM is considered RACM, and is mixed throughout the demolition debris, the demolition debris is considered asbestos-contaminated material, and removal and disposal of it according to Federal EPA guidelines is required.

4.2 PERIMETER AND PERSONAL AIR SAMPLING RESULTS

Laboratory analytical results from the perimeter air samples (received from EMSL on June 7, 2019) ranged from less than the limit of detection to 0.003 fibers per cubic centimeter (f/cc). Table D-2 in Appendix D lists results from the perimeter air samples, and the laboratory analytical report from EMSL is in Attachment 2. The two perimeter air samples in which fiber detections occurred are as follows:

- WSF-S01-20190529 was an ambient air sample collected at the south perimeter air station and found to contain 0.003 fibers/cc.

- WSF-S03-20190529 was an ambient air sample collected at the west perimeter air station and found to contain 0.003 fibers/cc.

The analytical result from the personal air sample (WSF-BM01-20190529) also was received from EMSL on June 7, 2019. It indicated asbestos concentration at 0.014 f/cc (see Table D-2 in Appendix D and the laboratory analytical report in Attachment 2), which did not exceed the Occupational Safety and Health Administration (OSHA) exposure benchmark of 0.1 f/cc.

5.0 POTENTIAL THREATS TO HUMAN HEALTH

Factors to consider in determining appropriateness of a removal action at a site are delineated in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) at 40 CFR Part 300.415(b)(2). Sample results indicate presence of friable ACM at the site at concentrations that may present a health risk to nearby residents and the community, based on criteria that include, but are not limited to, the following:

A. Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants

During the site assessment on May 29, 2019, Tetra Tech documented presence at the site of friable ACM mixed with the demolition debris distributed throughout the site. Commercial businesses are next to and near the site, and evidence of trespassing and vandalism was apparent. Nearby human receptors (including nearby commercial occupants and trespassers) could be exposed to hazardous substances, pollutants, or contaminants migrating off site.

The Agency for Toxic Substances and Disease Registry (ATSDR) has studied toxicological effects of asbestos, and has conveyed the following information regarding that:

Significant exposure to any type of asbestos will increase the risk of lung cancer, mesothelioma and nonmalignant lung and pleural disorders, including asbestosis, pleural plaques, pleural thickening, and pleural effusion. (ATSDR 2008).

B. Weather conditions that may cause release or migration of hazardous substances or pollutants or contaminants

Weather conditions could continue to naturally degrade friable ACM and induce migration of asbestos fibers off site to the surrounding community.

TABLE C-1

WILSON SHIRT FACTORY – ASBESTOS BULK SAMPLE FIELD LOG (MAY 29, 2019)

Sample ID	Sample Time	Material	Primary Color	Secondary Color	Latitude	Longitude	Notes
WSF-B01-20190529	12:07	Roofing	Black	NA	41.66424230	-86.26398405	Tar with paper backing in debris pile in southeast area of site
WSF-B02-20190529	12:14	Transite fire door	Grey	NA	41.66435826	-86.26363432	In debris pile on east side of site
WSF-B03-20190529	12:22	Transite siding	Grey	White	41.66436595	-86.26361655	In debris pile on east side of site
WSF-B04-20190529	12:25	Transite siding	Grey	Green	41.66476593	-86.26360871	In debris pile at northeast corner of site
WSF-B05-20190529	12:31	Floor debris	Red	NA	41.66444756	-86.26450855	Red sheet flooring near southeast corner of west structure
WSF-B06-20190529	12:34	Drywall	White	NA	41.66441856	-86.26449826	Drywall on southeast corner of west structure
WSF-B07-20190529	12:41	Floor tile	Red	Black	41.66438331	-86.26484169	Floor tile and mastic on debris pile directly south of west structure
WSF-B08-20190529	13:17	Roofing	Black	NA	41.66424230	-86.26398405	Tar with paper backing in debris pile in southeast area of site
WSF-B09-20190529	13:19	Transite fire door	Grey	NA	41.66435826	-86.26363432	In debris pile on east side of site
WSF-B10-20190529	13:21	Transite siding	Grey	White	41.66436595	-86.26361655	In debris pile on east side of site
WSF-B11-20190529	13:24	Drywall	White	NA	41.66441856	-86.26449826	Drywall on southeast corner of west structure
WSF-B12-20190529	13:26	Floor debris	Red	NA	41.66444756	-86.26450855	Red sheet flooring near southeast corner of west structure
WSF-B13-20190529	13:27	Floor tile	Red	Black	41.66438331	-86.26484169	Floor tile and mastic on debris pile directly south of west structure
WSF-B14-20190529	13:29	Transite siding	Grey	Green	41.66476593	-86.26360871	In debris pile at northeast corner of site
WSF-B15-20190529	13:31	Floor tile	Red	Black	41.66438331	-86.26484169	Floor tile and mastic on debris pile directly south of west structure
Notes: B = Bulk asbestos sample NA = Not applicable WSF = Wilson Shirt Factory							

TABLE C-2**WILSON SHIRT FACTORY – ASBESTOS AIR SAMPLE FIELD LOG (MAY 29, 2019)**

Sample ID	Sample Type	Pump	Sample Height (feet)	Latitude	Longitude	Notes
WSF-S01-190529	Field Sample	AirCon2	3-5	41.66406132	-86.26399081	South perimeter air station
WSF-S02-190529	Field Sample	AirCon2	3-5	41.66437504	-86.26360013	East perimeter air station
WSF-S03-190529	Field Sample	AirCon2	3-5	41.66430354	-86.26484306	West perimeter air station
WSF-S04-190529	Media Blank	NA	NA	NA	NA	Field blank
WSF-S05-190529	Media Blank	NA	NA	NA	NA	Lot blank
WSF-BM01-190529	Field Sample	GilAir5	3-5	NA	NA	Personal sample collected by Brendan Martin during bulk asbestos sampling

TABLE C-2

WILSON SHIRT FACTORY – ASBESTOS AIR SAMPLE FIELD LOG (MAY 29, 2019)

	Pre Cal (L/min)	Start Time	Post Cal (L/min)	Stop Time	Total Time (min)	Average Flow (L/min)	Total Volume (L)	Notes
WSF-S01-190529	10.171	11:20	10.251	13:40	140	10.21099	1429.54	South perimeter air station
WSF-S02-190529	10.036	11:28	10.34	13:43	135	10.188	1375.38	East perimeter air station
WSF-S03-190529	10.279	11:34	16.893	13:49	135	13.586	1834.11	West perimeter air station
WSF-S04-190529	NA	NA	NA	NA	NA	NA	NA	Field blank
WSF-S05-190529	NA	NA	NA	NA	NA	NA	NA	Lot blank
WSF-BM01-190529	2.54	11:55	2.54	13:35	100	2.54	254	Personal sample collected by Brendan Martin during bulk asbestos sampling
Notes:								
All samples were collected in MCE Cassettes.								
cc = Cubic centimeter								
BM = Personal air sample for Brendan Martin								
L = Liters								
LOD = Limit of detection								
mm² = Square millimeter								
NA = Not applicable								
S = Asbestos air sample								
WSF = Wilson Shirt Factory								
min = Minute								

TABLE D-1

WILSON SHIRT FACTORY – ASBESTOS BULK SAMPLE RESULTS (MAY 29, 2019)

Sample ID	Result	Material	Appearance	Type
WSF-B01-20190529	Non-Detect	Roofing tar	Black	NA
WSF-B01-20190529	Non-Detect	Roofing tar paper	Black	NA
WSF-B02-20190529	25%	Transite fire door	Grey	Chrysotile
WSF-B03-20190529	20%	Transite siding	Grey/white	Chrysotile
WSF-B04-20190529	20%	Transite siding	Grey	Chrysotile
WSF-B05-20190529	Non-Detect	Floor debris	Brown	NA
WSF-B06-20190529	Non-Detect	Drywall	Brown/white	NA
WSF-B07-20190529	8%	Floor tile	Red	Chrysotile
WSF-B07-20190529	4%	Mastic	Black	Chrysotile
WSF-B08-20190529	Non-Detect	Roofing tar	Black	NA
WSF-B08-20190529	Non-Detect	Roofing tar paper	Black	NA
WSF-B09-20190529	20%	Transite fire door	Grey	Chrysotile
WSF-B10-20190529	20%	Transite siding	Grey	Chrysotile
WSF-B11-20190529	Non-Detect	Drywall	Brown/white	NA
WSF-B12-20190529	Non-Detect	Floor debris	Brown	NA
WSF-B13-20190529	7%	Floor tile	Red	Chrysotile
WSF-B13-20190529	3%	Mastic	Black	Chrysotile
WSF-B14-20190529	15%	Transite siding	Grey	Chrysotile
WSF-B15-20190529	6%	Floor tile	Red	Chrysotile
WSF-B15-20190529	4%	Mastic	Black	Chrysotile
Notes: B = Bulk asbestos sample NA = Not applicable WSF = Wilson Shirt Factory				

WILSON SHIRT FACTORY – ASBESTOS AIR SAMPLE RESULTS (MAY 29, 2019)

Notes:

cc = Cubic centimeter

BM = Personal air sample for Brendan Martin

L = Liters

LOD = Limit of detection

mm² = Square millimeter

S = Asbestos air sample

WSF = Wilson Shirt Factory



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Received Date: 05/31/2019 11:50 AM

Analysis Date: 06/10/2019

Collected Date:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
WSF-B01-20190529-Tar	Roofing	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
041914784-0001					
WSF-B01-20190529-Tar Paper	Roofing	Black Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
041914784-0001A					
WSF-B02-20190529	Transite Fire Door	Gray Fibrous Homogeneous		75% Non-fibrous (Other)	25% Chrysotile
041914784-0002					
WSF-B03-20190529	Transite Siding	Gray/White Fibrous Homogeneous		80% Non-fibrous (Other)	20% Chrysotile
041914784-0003					
WSF-B04-20190529	Transite Siding	Gray Fibrous Homogeneous		80% Non-fibrous (Other)	20% Chrysotile
041914784-0004					
WSF-B05-20190529	Floor Debris	Brown Fibrous Homogeneous	30% Cellulose	70% Non-fibrous (Other)	None Detected
041914784-0005					
WSF-B06-20190529	Drywall	Brown/White Fibrous Homogeneous	15% Cellulose	85% Non-fibrous (Other)	None Detected
041914784-0006					
WSF-B07-20190529-Flo or Tile	Floor Tile	Red Non-Fibrous Homogeneous		92% Non-fibrous (Other)	8% Chrysotile
041914784-0007					
WSF-B07-20190529-Ma stic	Mastic	Black Non-Fibrous Homogeneous		96% Non-fibrous (Other)	4% Chrysotile
041914784-0007A					
WSF-B08-20190529-Tar	Roofing	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
041914784-0008					
WSF-B08-20190529-Tar Paper	Roofing	Black Fibrous Homogeneous	60% Cellulose	40% Non-fibrous (Other)	None Detected
041914784-0008A					
WSF-B09-20190529	Transite Fire Door	Gray Fibrous Homogeneous		80% Non-fibrous (Other)	20% Chrysotile
041914784-0009					
WSF-B10-20190529	Transite Siding	Gray Non-Fibrous Homogeneous		80% Non-fibrous (Other)	20% Chrysotile
041914784-0010					
WSF-B11-20190529	Drywall	Brown/White Fibrous Homogeneous	15% Cellulose	85% Non-fibrous (Other)	None Detected
041914784-0011					
WSF-B12-20190529	Floor Debris	Brown Fibrous Homogeneous	30% Cellulose	70% Non-fibrous (Other)	None Detected
041914784-0012					

Initial report from: 06/10/2019 11:47:59



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EMSL Order: 041914784

Customer ID: TEHC25

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Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
WSF-B13-20190529-Flo or Tile	Floor Tile	Red Non-Fibrous Homogeneous		93% Non-fibrous (Other)	7% Chrysotile
041914784-0013					
WSF-B13-20190529-Mastic	Mastic	Black Non-Fibrous Homogeneous		97% Non-fibrous (Other)	3% Chrysotile
041914784-0013A					
WSF-B14-20190529	Transite Siding	Gray Fibrous Homogeneous		85% Non-fibrous (Other)	15% Chrysotile
041914784-0014					
WSF-B15-20190529-Flo or Tile	Floor Tile	Red Non-Fibrous Homogeneous		94% Non-fibrous (Other)	6% Chrysotile
041914784-0015					
WSF-B15-20190529-Mastic	Mastic	Black Non-Fibrous Homogeneous		96% Non-fibrous (Other)	4% Chrysotile
041914784-0015A					

Analyst(s)

Keishla Vazquez Caraballo (20)

Benjamin Ellis, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method"), but augmented with procedures outlined in the 1993 ("final") version of the method. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. All samples received in acceptable condition unless otherwise noted. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. EMSL recommends gravimetric reduction for all non-friable organically bound materials prior to analysis. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC-IHLAP Lab 100194, NYS ELAP 10872, NJ DEP 03036, PA ID# 68-00367, LA #04127

Initial report from: 06/10/2019 11:47:59

15TU



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Received Date: 05/31/2019 11:50 AM

Analysis Date: 06/06/2019

Collected Date: 05/29/2019

Project: 05ZZ / USEPA / 5-052919-171109-0001

Test Report: Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method - A Rules, Revision 3, Issue 3, 4/29/2019

Sample	Location	Sample Date	Volume (L)	Fibers	Fields	LOD (fib/cc)	Fibers/mm ²	Fibers/cc	Notes
WSF-BM01-20190529 041914782-0001		05/29/2019	254	7.5	100	0.011	9.55	0.014	
WSF-S01-20190529 041914782-0002		05/29/2019	1429.54	9.5	100	0.002	12.1	0.003	
WSF-S02-20190529 041914782-0003		05/29/2019	1375.38	<5.5	100	0.002	<7.01	<0.002	
WSF-S03-20190529 041914782-0004		05/29/2019	1834.11	12.5	100	0.001	15.9	0.003	
WSF-S04-20190529 041914782-0005		05/29/2019		<5.5	100		<7.01		Field Blank
WSF-S05-20190529 041914782-0006		05/29/2019		<5.5	100		<7.01		Field Blank

The results reported have been blank corrected as applicable.

Analyst(s):

Susan Muir PCM 6

Benjamin Ellis, Laboratory Manager
or other approved signatory

Limit of detection is 7 fibers/mm². Intra-laboratory Sr values: 5-20 fibers = 0.24, 21-50 fibers = 0.21, 51-100 fibers = 0.12. Inter-laboratory Sr values (Average of EMSL round robin data) = 0.32. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. EMSL is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. Results have been blank corrected as applicable. The results in this report meet all requirements of the NELAC standards unless otherwise noted. Samples received in good condition unless otherwise noted. Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NYS ELAP 10872, AIHA-LAP, LLC--IHLAP Accredited #100194, NJ DEP 03036, PA ID# 68-00367, LA #04127

Initial report from: 06/07/2019 01:09 AM